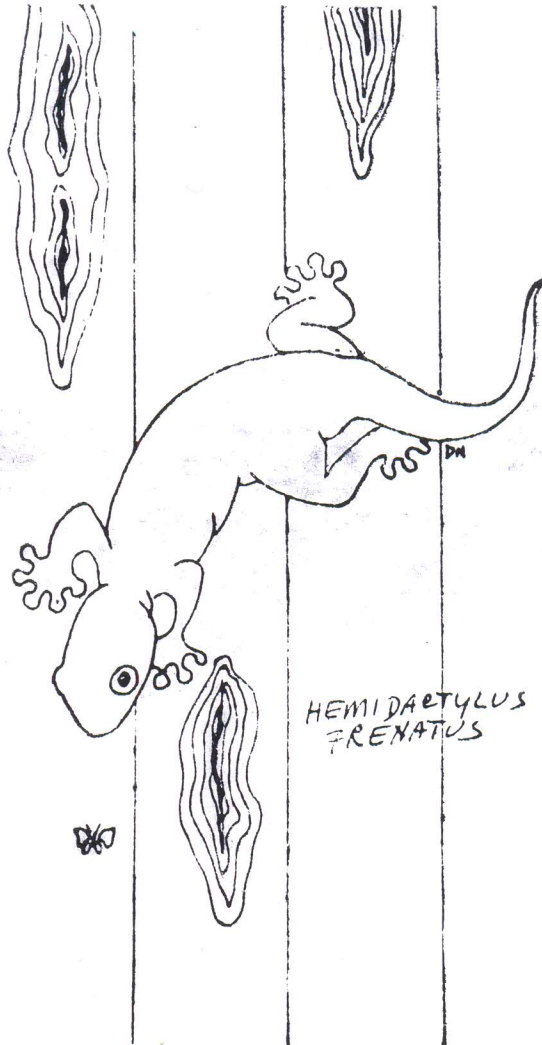


HAMADRYAD

7:1



HEMIDACTYLUS
FRENATUS



MICROHYLA ORNATA

News from the MADRAS SNAKE PARK and
MADRAS CROCODILE BANK

The freshwater turtle survey funded by World Wildlife Fund- U.S.A. got underway in August-September. J Vijaya (MSP) spent a month and a half in West Bengal with Pankaj Manna of Calcutta University collecting data from the field and from meat markets, where turtles turn up in their thousands each year, mostly during the winter low water period. Ms. Vijaya is back in the field and at the time of writing is in Bihar. Turn to page 11 for latest turtle scoup.

The "Snakes and Ourselves" museum at the Snake Park, initiated by our Secretary Jagannatha Rao, will soon be open to public visitation. It will have a collection of statues, carvings, paintings etc. showing the importance of the snake in Hindu mythology and religion.

In September a team from the Snake Park spent a week in the Palni Hills at Kodaikanal. Herps observed included all the uropeltids found in the area and an Oligodon that seems to be a new species. The Philautus observed reaffirmed the taxonomic problems with this genus and one of us (Shekar Dattatri) is starting to work on this group with the help of Ranil Senayake of Colombo.

The snake exhibition carried out by MSP and organized and sponsored by the Museum of Natural History in New Delhi, was highly successful with a large attendance and extensive press coverage. The exhibition was on at the Museum's auditorium from the 15th to the 22nd December. There were hourly talks in Hindi and much audience participation. "Why is it that snakes are found near grave-yards? Is it because they consume human flesh?".

During October-November the Director was in the People's Republic of Mozambique for a month, and in Zimbabwe for a week. He was working with a team of biologists from the Mozambican wildlife department to evaluate the possibilities of farming the Nile crocodile in that country for a conservation-management scheme.

Shekar Dattatri has been invited to join the wildlife biology course at Kanha National Park. The course will run for three weeks in January.

In October the Crocodile Bank sent 50 yearling mugger to the Wildlife Dept. in Ranchi, Bihar. The mugger will be reared at the newly inaugurated Mata Mugger Sanctuary and released into the Bhera River next year. Another 50 mugger bred at the Crocodile Bank are on their way to the Kerala Forest Department this month and 30 more to Andhra Pradesh for their breeding and rehabilitation scheme.

Editor's Note

Readers will note- hopefully with a delighted yell- that Hamadryad will now triple as the mouthpiece of the IUCN/SSC's Snake Group. The Chairman of the Group (MSP's Director) has been desperately trying to produce an independent newsletter, but current postage rates had him scuttling to Hamadryad for help.

NOTESssssssssssss^s

Handbag farming

Alistair Grahame ("Eyelids of Morning") is going into the crocodile farming business in Australia and writes, "Well you can place your order now. The minister concerned has just given me the nod that makes me OZ's first out and out handbag rancher..."

Chinese alligators

Myrna Watanabe is through with a preliminary survey of A. sinensis in Xuancheng Province and its environs in China. She estimates a population of 300-500 animals for Xuancheng; bottom heavy with few adults and mostly juveniles. There is apparently little habitat left: "The animals live in small (from 20m x 20m) pools on intensively farmed communes with dense human populations or, in even more marginal habitat, in reservoirs on rice farms at elevations less than 100 m above sea level". Alligators are often caught on agricultural lands and brought to a recently started alligator farm whose facilities are badly strained as the influx of eggs and animals has far exceeded their expectations.

Breeding loan

The Reptile Breeding Foundation in Ontario, Canada, is sending its two 11 and 12 year old male gharial to the Atlanta Zoo (which has 2 females) on a breeding loan. T A Huff, Director of the RBF, writes about sexing: "These animals were sexed by manual probing with a finger. We determined them to be males by the presence of a hard rather large protrusion from the anterior wall of the cloaca, which we assumed to be a penis. In both animals, this protrusion was at least $1\frac{1}{2}$ inches in length and from the data which we have indicates a male. We are under the belief that the clitoris of the female is not as rigid, more fleshy, and $\frac{1}{2}$ inch or less in length".

Diet of V. salvator

On 30-10-81 the adult male water monitor lizard Varanus salvator at the Snake Park was seen eating an average sized flap-shell turtle Lissemys p. punctata.

Sea turtles fenced off

During his recent survey on the Kerala coast Satish Bhaskar found that over a third of that states coastline is now closed to nesting turtles because of embankments built to prevent erosion.

Illegal skin trade

In the last week of September a wildlife protection squad busted an underground tannery in Madras and confiscated over 10,000 skins at various stages of tanning. A newspaper report (Indian Express, 29.9.81) said that salted skins are smuggled into Madras from traditional skin centres such as Warrangal, Shimoga, Tiruchi, Pudukottai, Kallupetti, Melur and Kallakurichi.

Bungarus caeruleus in West Bengal

West Bengal is generally thought to be a stronghold of the banded krait B.fasciatus with the common krait being fairly rare. Therefore it is interesting that one of our readers B.K Saha found ten common kraits in Harendranagar village, 24 Parganas from July 9th to August 30. All except one DOR specimen were found at dusk or after dark. Of the live specimens, 4 were caught inside village huts, 4 in brick piles and rubble on the street and 1 in a paddy field. The largest measured 152 cm and the smallest 79 cm.

Snake charmers of Samphoor village

During the course of her freshwater turtle survey in West Bengal J Vijaya visited an itinerant snake charmers village near the south coast of Midnapore district. The approximately 300 charmers, originally bird catchers from Orissa, settled in West Bengal some 250-300 years ago. They worship a snake goddess called Manusha and Chandi who is their version of Durga, believe in mantras and witchcraft, and have herbal medicines for snakebite. They travel extensively, mostly around Orissa, Bihar and West Bengal and generally use monocled cobras, Russells vipers and cat snakes.

Snakebite treatment in rural areas

At the snake exhibition in New Delhi, one was constantly asked about snakebite treatment for the villager who, even a few miles out of a major city, is cut off from health services after the last bus for the day passes through at 9 or 10 pm. This is a million dollar question. One man suggested that panchayat unions should store antivenom and train two or three responsible citizens to administer it. With the boom in population as well as agricultural activity this problem is also intensifying. Dr. S G Saha (see also Hamadryad 6: no.3) writes that a 32 year old woman who was bitten by a common krait in the Sunderbans recently, died because the nearest antivenom (at his clinic) was 15 kms away, and by the time she got there it was too late. Snakebite is a rural health hazard but antivenom is yet to be widely available in the rural areas of India.

Some Bengali snake myths

Snake myths and legends abound in West Bengal. People say that kraits lick a man's sweat as he sleeps; that snakes should be cremated after being killed, or they will be re-born; that if a snake bites someone it should not be killed, or the victim will not survive. And many more. These have been sent to us by B K Saha, Calcutta.

In Pakistan snakes are not worshipped but are thoroughly despised and widely killed. The large gatherings around snake charmers, and at the reptile house at the zoo indicate the interest that snakes elicit but it needs to be channeled in the right direction. A web of myth surrounds snakes. For instance, the Nawab of Lagari of Hyderabad (Sind), renowned for his large collection of snakes, claimed he could cure cancer through venomous snakebite. He got into trouble when one of his patients died!

72 species of snakes, from 8 families and 34 genera have been recorded in Pakistan. Of these 14 are sea snakes. A checklist with distribution data follows.

The extensive development of canal systems, deforestation, agriculture and grazing lands have changed the original thorn forest to such a degree that today almost every type of habitat, from savanna to scrub, grasslands, steppes and deserts are found in the environs of Pakistan. Although many reptile species have adapted to man made environs and pressures, large numbers are killed for their skins. Lately, people in business have engaged themselves in the snakeskin trade using Python molurus, Ptyas mucosus, Spalerosophis diadema, S. arenarius, Naja naja and others.

The Federal Government is drafting a law for the protection of Ptyas mucosus, P. molurus and other exploited species: but the task of implementation is difficult and reptiles, being generally thought to be unappealing, attract little attention and empathy. In fact one has often seen the dejection of students who are offered a snake study for their post-graduate work.

Distribution of snakes in Pakistan

<u>Taxon</u>	<u>Baluchistan</u>	<u>Sind</u>	<u>Punjab</u>	<u>N.W.F.P</u>
<u>Typhlops braminus</u>	-	+	+	+
<u>T. porrectus</u>	-	+	+	+
<u>Leptotyphlops blanfordii</u>	+	+	+	+
<u>L. macrorhynchus</u>	+	+	-	-
<u>Eryx johnii</u>	+	+	+	+
<u>E. conicus</u>	+	+	-	-
<u>E. tataricus speciosus</u>	+	-	-	-
<u>Python molurus</u>	-	+	-	-
<u>Boiga trigonata trigonata</u>	-	+	+	+
<u>B. t. malanocephala</u>	+	-	-	-
<u>Argyrogena fasciolata</u>	-	+	+	-
<u>Coluber k. karelini</u>	+	-	+	-
<u>C. k. mintonorum</u>	+	-	-	-
<u>C. florulentus</u>	+	-	-	-
<u>C. r. ravergeri</u>	+	-	-	+
<u>C. rhodorachis ladacensis</u>	+	+	+	+
<u>C. gracilis</u>	-	+	-	-
<u>Dendrelaphis tristis</u>	-	+	-	-
<u>Eirenis persica walteri</u>	+	+	+	+
<u>Enhydris pakistanica</u>	-	+	-	-
<u>Lycodon aulicus aulicus</u>	-	+	+	-
<u>L. s. striatus</u>	+	+	+	+
<u>L. s. bicolor</u>	+	+	+	+
<u>L. travancoricus</u>	-	+	-	-
<u>Tytorhynchus maynardi</u>	+	-	-	-
<u>L. paradoxus</u>	-	+	+	-
<u>L. ridgewayi</u>	+	-	+	-
<u>Natrix platyceps</u>	-	-	-	+
<u>N. sieboldii</u>	-	-	-	+

	Baluchistan	Sind	Punjab	N.W.F.P.
<u>N. stolata stolata</u>	-	+	+	+
<u>N. tessellata tessellata</u>	-	-	-	+
<u>N. cerasgaster</u>	-	+	-	-
<u>N. piscator piscator</u>	+	+	+	+
<u>Macrophisthodon plumbicolor</u>	-	+	-	-
<u>Oligodon arnensis</u>	+	+	+	+
<u>O. taeniolatus</u>	+	+	+	+
<u>Psammophis C. condanarus</u>	-	+	+	-
<u>P. leithii</u>	+	+	-	+
<u>P. lineolatus</u>	+	-	-	-
<u>P. schokari</u>	+	+	+	+
<u>Ptyas mucosus</u>	+	+	+	+
<u>Spalerosophis arenarius</u>	+	+	-	-
<u>S. d. diadema</u>	+	+	+	+
<u>S. d. schirazianus</u>	+	-	-	+
<u>Elaphe helena</u>	-	+	-	-
<u>Telescopus rhinopoma</u>	+	+	-	+
<u>Bungarus caeruleus</u>	+	+	+	+
<u>B. sindanus</u>	-	+	+	-
<u>Naja n. naja</u>	+	+	+	+
<u>N. n. oxiana</u>	+	-	+	+
<u>Echis carinatus</u>	+	+	+	+
<u>E. c. astole</u>	Island Astola, off the Makran coast			
<u>Eristicophis macmahonii</u>	+	-	-	-
<u>Pseudocerastes p. persicus</u>	+	-	-	+
<u>P. bicornis</u>	-	-	-	+
<u>Vipera lebetina obtusa</u>	+	-	-	+
<u>V. r. russelii</u>	-	+	+	-
<u>Agkistrodon himalayanus</u>	-	-	-	-

Prof. M S Khan
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PAKISTAN

Flap-shell turtle nests at Taramani, Madras

On 13th October I went out to the Taramani area with Chockalingam to look for flap-shell turtle (Lissemys p. punctata) nests. Between 8.45 am and 12.30 pm in a large field dotted with thorny scrub and rain-filled ditches and ponds, we found six nests, each one located in a 'kara mullu' bush. Of these two had been emptied by humans.

Data on the 4 nests found intact:

Eggs	Cleared area	Curved straight depth	Chamber mouth	Depth to 1st egg	Distance from water
5	29x29cm	16.5cm; 11.0 cm	10x6cm	7 cm	50 cm
4	18x19cm	13cm; 9cm	9.5x8.0	8 cm	30 m
6	34x21cm	11.0cm; 9.5cm	6.5x6.5	7 cm	15 m
4	36x38cm	15.9cm	15.9cm	11 cm	No water in sight

Three of these nests had adjacent trial nest holes. Nest 4 had an open nest chamber but the eggs were intact.

Chockalingam, whose family used regularly to eat these 'peal aamai' has opened females during the nesting season (Sept- Oct- Nov-) and found both full term as well as developing eggs in the oviduct. He feels that Lissemys nests twice each season with a one month interval in between. The small clutches we found are perhaps significant: a freshly laid nest we found in November '80 had 8 eggs. Chances are that small clutches are laid at the first nesting and larger ones during the second phase. In any case this is an interesting possibility and requires attention.

J Vijaya
MSP

The Jhampan festival of Vishnupur

Thousands of people come every year to Vishnupur for the Jhampan snake festival, which takes place on the last day of Sravana, the monsoon month of the Bengali calendar (around July - August). It is truly a spectacular occasion. The priests of the festival who are in fact performers in this grand snake show are brought in carriages called "jhampan" from which the festival gets its name. The priests, called Jhampanias, are snake-charming gurus and come from all sections of the community. They are directly associated with snake charming or catching snakes, selling venom or treating snakebite. Snake charmers are called sapura, and witch doctors ojha. A gunin is a senior person in the snakebite treatment field who relies mainly on charms. The whole system is esoteric and the secrets are passed from father to son.

The Jhampan is basically a regional harvest festival and is closely associated with the fertility cult. It owes its origin to a 16th century ritual performed during a grand reception to honour Vir Hambir Malla, the king of Vishnupur, on his winning a battle. Snake charmers were the main participants in the performance which became a tradition, being repeated every year on the same day. Today long after the kingdom has been dissolved the festival continues.

On the day of the Jhampan, the Jhampanias are brought in colorfully decorated carriages and bullock carts to the old palace ground, with their disciples. Then bamboo, grass and cane baskets are brought in with king cobras, spectacled and monocled cobras, russells vipers, banded kraits, rat snakes, vine snakes, flying snakes, pythons among others. Most snakes are de-fanged but some are not and fatal bites do occur. It is therefore compulsory for a participant to register with the local police.

Folk music/played and performers compose their own songs such as: "The /is poison vanishes at the desire of the goddess Manara".

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Reptiles and amphibians seen in Kodaikanal (Palni Hills, Tamil Nadu)
16 to 22 September 81.

SNAKES

<u>Species</u>	<u>Locality</u>	<u>Remarks</u>
Ahaetulla dispar	Ghats	
Lycodon travancoricus	Ghats	Dead on road
Oligodon sp.	Ghats	Seems to be new species
Macropisthodon plumbicolor	Ghats	
Xylophis perroteti	Ghats	DOR
Platyplectrurus madurensis	Kodaikanal, Ghats	Found under rocks
Platyplectrurus trilineatus	Kodai, Ghats	Found under rocks
Uropeltis ellioti	Ghats	Found under rocks
Uropeltis woodmasonii	Ghats	Found under rocks
Tereturus rhodogaster	Ghats	Found under rocks

LIZARDS

Salea annamalayana	Kodai
Leiopisma travancoricum	Kodai
Leiopisma palnicum	Kodai, Ghats
Cnemapsis	Ghats

To be identified

FROGS

Rana malabarica	Ghats
Rana limnocharis	Kodai
Rhacophorus sp.	Kodai
Philautes sp.	Kodai, Ghats
Bufo melanostictus	Throughout
Bufo microtypanum	Kodai, Ghats

To be identified.

Madras Snake Park

Mozambique and Zimbabwe

Rom Whitaker spent five weeks in Mozambique and a week in Zimbabwe, doing a crocodile farming feasibility study for F.A.O.

En route to Mozambique I had a day in Lusaka and went to the Munda Wanga Snake Park about 15 kms out of town. The snake keeper, John Mullwano showed us a number of common local snakes, several like the night adder and mole snake beings "firsts" for me. The extra deep snake pit, a monitor pit, a crocodile pit and a row of dilapidated cages compose the Snake Park. An injection of a little capital and a lot of interest could make it a good (and possibly lucrative) tourist and educational center.

In Mozambique constantly visible reptiles were the dwarf day gecko (Lygodactylus capensis) and the common striped skink (Mabuya striata). The southern dry zone borders Kruger National Park in South Africa. To me the area around the Massingir reservoir was reminiscent of scrub jungle in India. The weather was warming up and the rains were just on the verge of breaking, an ideal time for reptiles. One evening my friend Dietrich, a Brazilian fisheries officer drove us toward the reservoir where we were to meet the fishermen who had promised to take us out after dark. The night air was warm and electric with muffled thunder and distant flashes of lightning. Barrelling down the road padded with a foot of dust I caught sight of something and yelled "snake" Dietrich swerved in time and jammed on the brakes. Running back through the swirling red clouds I saw the retreating tail of a stumpy pale snake, "Aspidelaps" I thought out loud; I'd never seen one alive but this stubby species, the shield nosed snake, is very distinctive. Sitting up like a cobra and hissing loudly it is most impressive, displaying a wide black neck band as do a number of the cobras. As with most elapids we've had experience with, it would only perform this defensive display by day; at night it would only try to escape except when actually restrained with a stick. It has large fangs for its size and while nothing is known of the venom, Branch (1981) writes that it can inflict a dangerous bite.

Several snakes went off the road too fast for us to get, then just near the village of Cubo a large banded Egyptian cobra made us jerk to a halt. It put up little resistance as we carefully bagged it though next day it was dramatically defensive for the camera. That night we saw fifteen Nile crocodiles among the rocky outcrops where the Oliphants River enters the reservoir. Most appeared to be adults though we did approach and capture several healthy small ones which were marked and released. By this time lightning was all round us and the wind was picking up, bringing us a tremendous frog chorus from the Phragmites reeds. The motor then packed up and after getting blown around the reservoir the rest of the night we made it back to shore at daylight. Crocodiles had not been commercially hunted since 1970 and the five year old reservoir has a recovering population. We saw adult and juvenile crocodiles below the dam in the river as well as in a small brackish water lake nearby. The Changane fishermen believe crocs have venom in the tail and generally will have nothing to do with them. head

During one hot walk through the open forest near the fishing village of Cubo I leaped dramatically on a rock monitor (Varanus albigularis exanthematicus) and felt a bit foolish when it didn't resist capture. In head shape and general demeanor it resembles Varanus flavescens of northern India. A short while later I surprised a strikingly beautiful stripe-bellied sand snake (Psammophis subtaeniatus) hunting a striped skink at a tree base. The fast snake almost got away in spite of my advantage of surprise. It calmed down in a short time and was returned to its foraging. A twig snake (Thelotornis capensis) stopped us on the main road as it made its stately way across, head up. When approached it started moving faster,

swelling its throat and exhibiting the large black "eyespot". Once in the roadside bushes it stopped and was virtually invisible, its cryptic coloration matching the branches.

Confronted by interesting frogs and calls from a forest pool I regretted not having a good amphibian reference with me. Bufo regularis was the commonest amphibian to be seen in this pre-rain period.

A few days later I was flying north to Beira, first over village cultivation and then mainly forest. Looking down over India, the pattern is in squares, the cultivation plots neatly allotted and even forests in "blocks" with straight borders. Below me now, the Mozambican countryside was a pattern of circles, the meshamba with cultivation and fence surrounding the house, the termite mounds with their circles of dense vegetation and circular "feeding boundaries" of the termites. We passed over the rivers I had pored over on the map but though I strained we were too high to see the crocs one imagined were down there.

The next day I was in a little Cessna headed for the Marroneu Wildlife Utilization Area where I was to examine the prospects of crocodile farming. The next 10 days were a blur of activity starting each day at 5AM and rarely ending before midnight. José Tello, the dynamic director of Emofauna (a wildlife utilization department) had a helicopter waiting for us so the first few days were taken up in surveying the area for crocodiles, participating in the culling of 55 Cape buffalo and a raid on a poacher's camp.

With the expert company of Blaundé and Gustadio, two Sena hunting guides, we tromped and sloshed through the papyrus and grass-choked river edges looking for crocodile nests. We located 22 nest sites, but many had already been robbed by predators. The female was on two of the nests and we surprised a big Nile monitor skulking around another nest. We were carrying a big rifle for protection but carefully avoided hippo, elephant and buffalo; the last of which is an extremely abundant animal with nearly 50,000 in the 15,000 km² utilization area.

On one evening crocodile sortie in a dugout we very nearly got into trouble with a hippo who was apparently out for blood. Our fisherman helmsman turned the hollowed-out palmyra log with a speed and deftness perhaps motivated by the pachyderms' snortings. We gave up that evening having seen 18 crocodiles, it was full moon anyway, no night for crocking. Here in Marroneu too the rain "was about to break", so herp activity still hadn't begun in earnest. As preoccupied as I was with crocodiles it was just chance bumping into some other nice creatures. While relaxing after lunch I heard a now familiar shout "mamba, mamba". I knew by now that "mamba" and "cobra" are general words for any snake so I ran out behind the kitchen anticipating a surprise. Following the slightly shaky pointing finger of the cook, I could see a splendid boomslang (Dispholidus typus) stretched along the top branches of a mango tree. Catching a venomous snake up a tree is rough, you keep forgetting to hold on; and there are ants. I was wishing for Ionides type super long mamba grabbers when I pulled the 2 metre snake on to myself, let go of it and watched it land on the ground, scatter the bystanders and disappear into the dense grass.

Almost every evening we wandered around looking for snakes. Both gaboons and puff adders were around and these were just a few of the many species I'd wanted to see in the wild for a long time. A nightly find was the Brown House Snake (Boaedon fuliginosus), a gentle, delicately-marked snake which adjusts to handling very quickly. These snakes were invariably on large tree trunks and one

was under a log bridge, just starting out on its night foray. Another common one was the herald snake (Crotaphopeltis hotamboeia). Dead specimens of the strikingly marked tiger snake (Telescopus semianulatus) much like our Boiga, the spotted bush snake (Philothamnus semivariatus), were brought to us one afternoon and that evening I found a marbled tree snake (Chamaetortus aulicus) by accidentally leaning on it.

One night a stubb snake, the snouted night adder (Causus defilippi) crossed our path and consented to enter a bag till next day's photos were taken. It seems a good-natured snake but night adders are responsible for most venomous bites in some areas, though seldom very serious.

Bufo regularis was the amphibian we regularly saw though several species of frogs called each evening in the dense growth of a damp ravine behind the rest house at Mungari Camp; one species, sounding much like our S. Indian Philautus, called from 5 to 10 metres up in the trees. The two common geckos were the common dwarf gecko and the more nocturnal tropical gecko (Hemidactylus mabouia). The common striped skink abounded as did several agamids, many tree agamas (Acanthopneuste atricollis) being resident at the camp.

We made the five hour crossing of the now dry flood plains to the wild coast, a high, sloping nesting beach of the loggerhead turtle within the Marrumeu reserve. We were too early for turtles but it was fascinating watching baboons picking through the shore debris, bushbuck on the dunes and tracks of many creatures including buffalo that come down to the sea's edge, perhaps for a salty drink? I missed a lightning like stripe bellied sand snake and then found a sand skink (Riopa sundevallii) under drift wood. Wandering among Barringtonia and mangrove trees along the Mupa River I searched in vain for brackish water snakes which Asia has plenty of. I did see a colourful young Nile monitor watching me alertly from above. We stayed long enough to bait hooks with waterbuck meat and haul in metre long catfish (Clarias mossambica) as fast as we could put a line in. From the air we had seen 20 crocs and numerous tracks along the Mupa but there was no trace of them now, a combination of our disturbance and high tide.

My companions on most evening walks were Baldeo Chandle and Alfredo Malagnia both working for Emofauna and both interested in snakes. One evening Blaudé took us up to Mungari communal village. It was a bright moonlit Saturday night and the village was up almost all night with singing, drum and marimba music. We sat watching an ingenious still drip out fiery moonshine graded from the strongest "first" batch to the "fifth" quality, still strong enough to curl your toes. The distinctive smell of dagga also wafted in the wind. The last creature we found late that night as we wended our bleary-eyed way home was a stunningly patterned frog, (Phrynomerus bifasciatus).

I left Marrumeu without seeing a black mamba or gaboon viper but I hope to get back and take a long look at the mountainous termite mounds. We always thought the S.Indian mounds had a fantastic ecology but their African counterparts some which are 20 metres in diameter and 6 metres high are rich islands of life.

(Will be continued in the May newsletter)

R. Whitaker
MSPT

Snakebite treatment in rural areas

It is surprising that no medical student has so far chosen to work on the subject of snakebite management in rural areas and what in fact can be done to protect the barefoot transportless village population from snakebite deaths. A villager even a few miles out of a major city like Madras is completely cut off from health services after the last bus passes his village at 9 or 10 p.m. One step toward improving the situation might be for every panchayat office to have a ready stock of antivenom and train a responsible citizen from that area to take a skin test and administer it. As the population grows and agricultural activity increases, this problem seems also to grow. Dr. S.G. Saha (see also Hamadryad 6:No.3) writes that a 32 year old woman who was bitten by a B. caeruleus in the Sunderbans died because the nearest antivenom (at his clinic) was 15 km away.

This is the sort of challenging problem that one would expect a medical student to take up. One might of course, be wrong.

Freshwater turtles

While sea turtles have received a fair amount of attention in recent years in India freshwater turtles have largely been ignored except when in a curry. The Wildlife Act of 1972 lists only the species which are all commercially used but by no means near as rare and unknown as for instance, Heosemys silvatica or Kachuga kachuga.

The Wildlife Act listing for Schedule I (Part II) includes these freshwater turtles: Trionyx gangeticus, Lissemys punctata, Kachuga teeta and Trionyx hurum. Melanochelys tricarinata and all Testudinidae and Trionychidae are listed in Schedule IV. Batagur which may be extinct or Geoclemys, Cyclemys among other rare species are not protected.

In the north, freshwater turtles mostly Trionyx gangeticus and Chitra indica are extensively used for meat and thousands turn up in, for instance, the 20 or so markets around Calcutta. In November-December, at low water the prices drop from Rs.18/- to Rs.5/- per kg; turtle meat is then cheaper even than beef. Hunting devices include hooks and using a long pole with a nail at one end to jab river beds. Nets are also used. In the Sunderbans, local fishermen described Batagur baska and said these were occasionally caught in offshore nets during November-December.

Freshwater turtles are an important food resource and as cheap and readily available protein for poor people are an excellent proposition. But there is a need to investigate the current large-scale usage. From all accounts numbers brought into markets decrease year by year; it is obvious that the industry must be regulated and limited to a reasonable number.

Perhaps easily reared species such as Lissemys can be commercially farmed? The long incubation period would try one's patience but the rewards would compensate.

Freshwater turtles in U.P/Bihar

J. Vijaya, currently in West Bengal, has just returned from U.P and Bihar. Below are some extracts from a letter dated 31 December.

Gorakhpur, U.P

We chose to spend time in Gorakhpur because it is (fairly) easily accessible from Calcutta and the Rapti River flows through it. There are many turtle dealers here. Some turtles are sent to Assam through Siliguri but most are sent to Bengal. Each dealer collects turtles from his agents, who in turn are supplied by turtle catchers. The species found here are Chitra indica, Trionyx gangeticus, Trionyx leithi, Hardella thurgi, Kachuga dhongoka, Kachuga tecta tecta, Kachuga tentoria circumdata, Kachuga smithi.

According to one catcher, turtle catching is fast becoming an art in U.P with sophisticated techniques from Bihar being adopted by hunters. There is a preference for Trionyx gangeticus at the markets and the eggs and meat are sold. Chitra indica, the narrow-headed turtle is getting scarce in W. Bengal, Bihar and U.P. It is called the "Cheem kachim".

The usual "market turtles" are T. gangeticus, T. leithi, C. indica, H. thurgi, and K. dhongoka being easily available and growing to large sizes.

From conversations at Howrah Railway Station (Calcutta) it appears that in the season (winter) at least 10 baskets with 10-20 turtles each arrive from U.P every day. One catcher explained that the quest for turtles for Calcutta markets first led to Bihar and has now spread to U.P. It has become a competitive and extensive business with at least 20 agents from the Rapti sending turtles to Bengal alone.

Turtle catching

1. T. gangeticus is sometimes caught by piercing a hook into the carapace. Divers chase the turtles either underwater or by boat.
2. More often they are baited on a row of hooks stretched across the water. Captured turtles are turned over, their feet stitched together and stacked under boat seats. Curved hooks are used for softshells and needle-shaped ones for emydines.
3. Lissemys punctata, widely preferred and eaten, is essentially a still water species found in tanks and ponds. These are drying up in this season and all are covered with water hyacinth. Lissemys burrow about 3" below the water bed and are caught by feeling for them with hands and legs.

Ten years back 40-70 kg softshells were common but today the average weight is 5-10 kg.

Bhagalpur, Bihar

In Patna the railway parcel officials told me that turtles are not sent from Patna city but turtles sent from Delhi etc. "pass through". Here most wholesale fish merchants are also in the turtle business. As in most other markets we found that turtles were specified by their weights, the length of time they can live in captivity, whether they bite, etc.

Sea turtles

At Digha, W. Bengal, /turtles are openly caught at sea; 200-300 /sea per day. I had come to Digha to enquire about Batagur baska. In Udaipur village on the Orissa - West Bengal border people talk knowledgeably of a "Ram kachim" which some villagers have kept as pets for 8-10 years. They say it is very rare, is found in the sea but does not have flippers.

J. Vijaya
MSPT

* * *

WWF-India initiated a year-long project intended to locate additional areas where sea turtles lay their eggs and to collect data relevant to turtle conservation. The surveys, undertaken on foot by Satish Bhaskar, covered about 1300 km of India's coastline including 500 km in the state of Gujarat.

TURTLE TRACKING IN GUJARAT

My visit to Gujarat in June-July 1977 on a sea turtle survey on behalf of the Madras Snake Park allowed me to look briefly over several beaches where sea turtles nested, and I then looked for an opportunity to revisit the more promising areas in the hope of observing and photographing turtles as they laid eggs.

Uninhabited Bhaidar island in the Gulf of Kutch was my particular favourite for though only six sea turtles -- all Olive ^Ridleys -- had come ashore during the two nights I had spent there, about a quarter of the island's 2 km- long sandy beach was littered with sea turtle egg shells. Sea turtles bury their eggs to depths reaching down to nearly a metre below the sand surface; the presence of the egg shells on the beach surface therefore intrigued me for I knew that predators like jackals and monitor lizards (and humans!) that unearth and consume sea turtle eggs did not exist on Bhaidar. The numerous but small ghost crabs living on the beach do eat sea turtle eggs and hatchlings but could safely be exempted from responsibility for the carnage because of its sheer scale. Wild cats are reported to live on Bhaidar. I had never seen any but had come across a few of their small tracks on the beach and smelt the pungent, gamy odour of their nest-like retreats among tall grasses in the island's interior. But their numbers appeared to be too small to explain the abundance of eggshells on the beach, on the assumption that they are capable of excavating sea turtle eggs -- and I have no information that they can. The inside of many of the egg shells were stained yellow or orange, obviously because the yolk they once contained had dried within. This had raised the possibility that they derived from sea turtle clutches that had been excavated ~~accidentally~~ during nest-construction by turtles that had inadvertently selected as their laying sites the sites of clutches deposited earlier by other turtles. If so, the density of turtles nesting on the island would be high, perhaps approaching the level of a small "arribada" (the term used for populations of sea turtles that nest en masse).

I was fortunate to get an opportunity to verify this four years later during a survey of the island for World Wildlife Fund-India.

On a bleak, rainy and windy day in August, a hired 3-man crew and I set out in a fishing sailboat from Beyt island in the Gulf of Kutch for Bhaidar, about 6 hours away. I planned on staying alone on Bhaidar for 5 days to survey sea turtles; the island had no potable water so I carried two jerrycans of water besides rations. A delay in starting out from Beyt resulted in the tide being too low to manouvre the boat while approaching Bhaidar in the shallows surrounding it. The shallows extend outwards from the island for a few kilometres; it being the crew's first trip to Bhaidar, they were understandably loth to risk their boat on the submerged reefs. I was obliged to 'disembark' in hip-deep sea water and wade $1\frac{1}{2}$ km to the island carrying my supplies while the boat crew hastily sailed away for deeper water and was lost to sight. Feeling sea-sick and fervently hoping that I would not encounter deep water while wading and be compelled to jettison my food, I soon got bogged down in knee-deep mud. Progress through this was extremely slow and exhausting and necessitated frequent halts to regain breath.

Eventually reaching the island, I flopped fown on an incredibly inviting sandy beach near a mangrove swamp. Twenty minutes later I got up unsteadily to locate a place to pitch my tent. A bottle containing a note embossed with the insignia of the Military Sealift Command (Atlantic) of the U.S. Navy had been washed ashore a short while earlier. Half-expecting the bottle to be a device to test sea currents, with perhaps a reward awaiting its finder, I carefully photographed it and extricated the note which said :

Help me

Get me off this ship I am abt to go crazy. I need help please.
Please return this letter and where found. Tossed July 12th 1981.

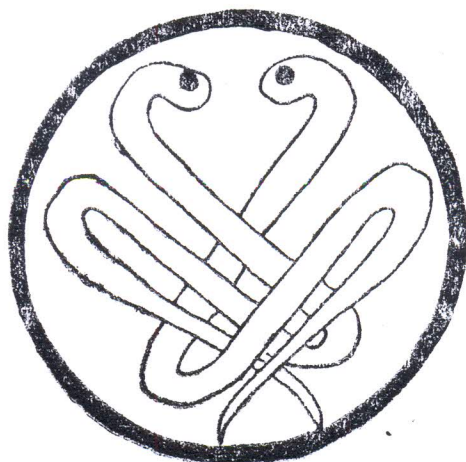
The message bore a name and a Massachusetts address. While the wording and the smell in the bottle strongly suggested that its late owner had been celebrating, here was a chance to learn something about the direction and speed of the currents the turtles nesting at Bhaidar might utilize or encounter -- I had found the note exactly a month after its being cast out and needed only to know the exact location where it had been dropped.

The next night I was looking at my first Ridleys laying their eggs at Bhaidar, One turtle accidentally excavated the eggs of another.

Four days later, my rations ran out because some of it had spoiled. Fortunately, the next day, despite rough weather, my sailboat crew arrived as scheduled at high tide and we left Bhaidar to its rightful owners -- the turtles, birds and crabs.

Satish Bhaskar
c/o WWF-India

IUCN/SSC SNAKE GROUP



NEWSLETTER NO. 1

JANUARY 1982

The Snake Specialist Group was conceived at the IUCN/SSC meeting in New Delhi in February 1981. At present the members are:

Brian Groombridge, UK
Fred Parker, Australia
Harold Cogger, Australia
Carl Gans, USA
Donald Broadley, Zimbabwe
W R Branch, South Africa
Ranil Senanayake, Sri Lanka
Reza Khan, Bangladesh
Rene Honegger, Switzerland
Vladislav Jirousek, Czechoslovakia
Konrad Klemmer, west Germany
A R Hoge, Brasil
Yoshio Sawai, Japan
Lim Boo Liat, Malaysia
T S N Murthy, India

A request for information on snakes under pressure was circulated in October and the response was good. Let me restate the request for continued feedback on three main themes: snake species under pressure and the reasons, proposed studies/remedial measures, people working on (or interested in) the species.

SUMMARY OF REGIONAL CORRESPONDENCE

Australia

Fred Parker writes that the status of the King Brown (Pseudechis australia) should be looked at; perhaps the toad Bufo marinus has affected it just as the Papuan Black has virtually disappeared from the Port Moresby area over the last 20 years. The effects of collectors on the Diamond Python and Hoplocephalus populations could warrant studies.

China

Heavy exploitation of snake populations for food and medicinal preparations takes place in Taiwan, China, Japan, North and South Korea, Thailand and many parts of Indonesia and Malaysia. Much of the catch is processed and sold in Hong Kong and Singapore. The species under heaviest usage include cobras, banded kraits, reticulated pythons, mamushis and amphibious sea snakes. Dr Huang chu-chien has sent a list of snakes found in China and efforts are being made to get trade statistics.

Europe

Rene Honcgger lists the following European species in need of studies and/or protection:

<u>Endangered</u>	<u>Vipera ursini ursini</u> , <u>Vipera ursini rakosiensis</u> , <u>Vipera ursini renardi</u> .
<u>Vulnerable</u>	<u>Coluber hippocrepis</u> , <u>Elaphe longissima longissima</u> , <u>Natrix natrix cetti</u> , <u>Vipera ammodytes montandoni</u> , <u>Vipera aspis aspis</u> , <u>Vipera berus</u> , <u>Vipera lebatina</u> <u>schweizeri</u> .
<u>Indeterminate</u>	<u>Coronella austriaca</u> , <u>Elaphe quatuorlineata</u> , <u>Elaphe situla</u> .

India

T S N Murthy of the Zoological Survey of India has proposed status surveys of snakes in the Western Ghats and Eastern Himalayas. He stresses the need to produce more popular literature on snakes to help dispel the unnecessary fear of all species so prevalent in rural India.

Pressure has eased off for the species always severely exploited for skins due to tightening of India's wildlife laws. But there are about 1.5 million snake skins with tanners in Madras alone as 'undeclared stock' right now, a fraction of the annual exports of the sixties but still a serious drain when added to unknown, undeclared stock. South Indian snake catchers are from the lowest socio-economic bracket and viable alternative employment is often not available to these people. One solution is being explored through the formation of the Irula Snake-catchers Cooperative Society, whose members will catch snakes for venom and release them after several extractions.

Mr J C Daniel, Curator, Bombay Natural History Society, has drawn attention to the possibility of several uropeltids becoming extinct because of heavy forest destruction.

Mauritius

David Bullock of the University of Durham writes in a letter dated 17 August 81- "You may be interested... in our proposed expedition to study the snakes on Round Island, Mauritius. Two of the proposed team, myself and Ben Osborne, visited Round Island in 1975 when we found one specimen of Bolyeria multicaudata and 26 of Casarea dussumurei. The purpose of our proposed visit in July/August 1982 is to monitor the reptile populations and resurvey vegetation plots by methods worked out in 1975. Further, we intend to make a film of the conservation problems of Round Island and carry out some educational work whilst on the mainland of Mauritius."

Quentin Bloxam, Curator of Reptiles at the Jersey Wildlife Preservation Trust writes that the Trust is maintaining seven Round Island Boas and it is hoped that they will successfully reproduce next year.

Papua New Guinea

Fred Parker feels that Boelen's python (P.boeleni) warrants field studies. Its distribution is little known but it appears to be uncommon; it is a protected species in PNG.

The Wildlife Division will bring out two publications on snakes this year, and these will be available (around July/August) from Carlene Lohberger, wildlife Division, Box 2585, Konedobu, Papua New Guinea.

UK

With information from Dr T Beebee and John Burton, it seems that the Smooth Snake (Coronella austriaca) is endangered, and fully protected with some conservation work underway; the Adder (Vipera berus) is under pressure from humans because of its alleged venomous attributes; and the Grass Snake (Natrix natrix) has suffered because people kill all snakes and because of a decline in manure heaps which are favourite nesting sites.

USA

Dr C Kenneth Dodd, Staff Herpetologist with the Office of Endangered Species has sent the following information:

Species protected under provisions of the US Endangered Species Act of 1973 are:

Mona boa	<u>Epicrates monensis monensis</u>
Puerto Rico boa	<u>Epicrates inornatus</u>
Virgin Islands Tree Boa	<u>Epicrates monensis granti</u>
New Mexico ridge-nosed rattlesnake	<u>Crotalus willardi obscurus</u>
Atlantic salt marsh snake	<u>Nerodia fasciata taeniata</u>
Eastern indigo snake	<u>Drymarchon corais couperi</u>
San Francisco garter snake	<u>Thamnophis sirtalis tetrataenia</u>

He writes that "good surveys have been undertaken on the San Francisco garter snake and New Mexico ridge-nosed rattlesnake. There are limited surveys underway on the Puerto Rico boa being conducted under contract through the US Forest Service in Puerto Rico. We desperately need surveys on both the Mona and Virgin Island tree boas; both are very rare. I think only 10 Mona boas have ever been reported. The Virgin Island tree boa occasionally turns up but is threatened by the continual

national parks, etc are protected and some species are under partial protection (their catching being restricted) even within other areas. For decreasing pressure on wild venomous snake populations, special serpentaria have been established, in which the following species are kept for medicinal purposes: Vipera lebetina, V. berus, Echis carinatus, Naja oxiana, Arkistrodon halys. They are situated in Baku City, Tashkent, Ashkabad, Moscow and Kara Kala.

West Indies

Dr F Wayne King, Director of the Florida State Museum writes that there are many innocuous colubrids in the West Indies that are lost through competition with introduced species on islands. A good many such species have become scarce, endangered, or locally extinct because the mongoose was introduced years ago to control rats in the cane fields. They have had very little impact on the rats but they have had a major impact on the snakes. For example, Alsophis antillensis antiquae from Antigua; Alsophis ater from Jamaica; Alsophis melanichnus from Hispaniola; Alsophis santicrucis from St Croix; Dromicus cursor from Martinique; and Dromicus ornatus from St Lucia all have been severely affected by the mongoose. In addition, many of them have lost major portions of their habitat to sugarcane development. Several of these species now occur only on small islands off the coast of the larger islands which form the major part of their range.

William Oliver of the Jersey Wildlife Preservation Trust was planning to be in Jamaica in January for a 2-3 month field study of Epicrates subflavus, of which the Trust has a very successful breeding programme.

ZIMBABWE

Donald Broadley, Curator of Herpetology, National Museum, Bulawayo, says in a November 18th '81 letter that he does not consider any Zimbabwean snakes to be endangered but four species which inhabit evergreen forest are under pressure. These are:

Southeastern forest marsh snake Matriciteres variegata sylvatica. Occurs in both montane and lowland forest; as montane forests are on the whole well conserved in Zimbabwe (catchment areas) the species is not under much pressure.

East African egg eater Dasypeltis medici medici. Restricted to lowland evergreen forest and riparian forest, so marginal in Zimbabwe. This habitat is protected in the Chirinda Forest Botanical Reserve and in the southern end of the Chimanimani National Park.

Forest cobra, Naja melanoleuca. Occurs in lowland forest, but in the Inyanga National Park and elsewhere it extends outside forest as an aquatic snake, occurring at altitudes up to nearly 2000 m. Not considered under pressure. /heavy

Eastern gaboon viper Bitis gabonica gabonica. Inhabits lowland forest, occasionally extends up into montane forests but is rare in this habitat. Persists following destruction of forest if some thick cover remains. Under some pressure from traders in live reptiles, but can be bred in captivity.

Python sobae is protected in Zimbabwe, reducing pressure on the species for the skin trade. I do not consider this species to be under heavy pressure in this country.

A list of priority projects will be compiled and circulated shortly.

Since it now incorporates the Snake Group newsletter, Hamadryad will be sent free of charge to members of the Group. However we will (happily) accept payment if you insist.

HAPPY
NEW
YEAR



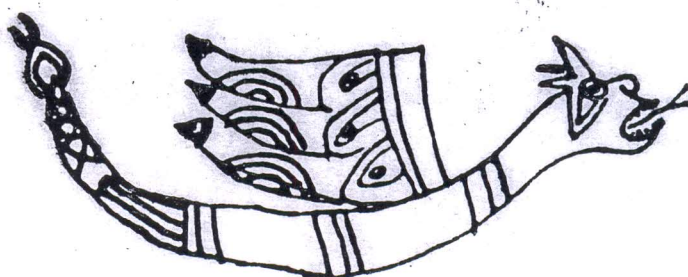
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